VA Medical Center
Grand Island, Nebraska
636-12-103, Renovate Backfill Canteen Space
Addendum No. 2

Attachment C

SECTION 08 33 00
COILING DOORS

PART 1 - GENERAL

1.1 DESCRIPTION

This section specifies coiling doors complete as specified.

1.2 RELATED WORK

A. Lock cylinders for cylindrical locks: Section 08 71 00, DOOR HARDWARE.

B. Field painting: Section 09 91 00, PAINTING.

C. Electric devices and wiring: DIVISION 26, ELECTRICAL.

1.3 MANUFACTURER'S AND INSTALLER'S QUALIFICATIONS

A. Coiling doors shall be products of manufacturers regularly engaged in manufacturing items of type specified.

B. Install items under direct supervision of manufacturer's representative or trained personnel.

1.4 FIRE DOOR REQUIREMENTS

Where fire doors exceed the size for which testing and labeling is available, submit certificates stating that the doors and hardware is identical in design, materials, and construction to a door that has been tested and meets the requirements for the class indicated.

1.5 SUBMITTALS

A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.

B. Shop Drawings:

1. Each type of door showing details of construction, accessories and hardware, electrical and mechanical items supporting brackets for motors, location, and ratings of motors, and safety devices.
2. Wiring diagrams for motors and controls, including wiring diagram for door, showing electrical interlock of motor with manually operated dead lock, electrical rough-in.

C. Manufacturer's Literature and Data:

1. Brochures or catalog cuts, each type door.
2. Manufacturer's installation procedures and instructions.

3. Maintenance instructions, parts lists.

D. Certificates:

1. Attesting doors, anchors and hardware will withstand the horizontal loads specified.
2. Attesting oversize fire doors and hardware are identical in design, material, and construction to doors that meet the requirements for the class specified.

1.6 APPLICABLE PUBLICATIONS

A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.

B. American Society for Testing and Materials (ASTM):

A36/A36M-08.....Structural Steel

A167-99(R2009).....Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet and Strip

A653/A653M-10.....Steel Sheet, Zinc-Coated (Galvanized) Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process

B209/209M-07.....Aluminum and Aluminum-Alloy Sheet and Plate

B221/B221M-08.....Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes, and Tubes

C. National Electrical Manufacturers Association (NEMA):

ICS 1-00(R2008).....Industrial Control and Systems General Requirements

ICS 2-00(R2005).....Industrial Control, and Systems, Controllers, Contactors, and Overload Relays

ICS 6-93 (R2006).....Industrial Control and Systems Enclosures

MG 1-10.....Motors and Generators

ST 20-92 (Rl997).....Dry-Type Transformers for General Applications

D. Master Painters Institute (MPI):

MPI #35.....Exterior Bituminous Coating

MPI #76.....Quick Drying Alkyd Metal Primer

E. National Fire Protection Association (NFPA):

70-11.....National Electrical Code 1999 Edition

80-10.....Fire Doors and Fire Windows

F. National Association of Architectural Metal Manufacturers (NAAMM):

AMP 500 Series.....Metal Finishes Manual

G. Underwriters Laboratories, Inc. (UL):

2010.....Fire Resistance Directory

PART 2 – PRODUCTS

2.1 MATERIAL

A. Stainless Steel: ASTM A167, Type 302 or 304.

2.2 DESIGN REQUIREMENTS

A. Coiling doors shall be spring counter balanced, overhead coiling type, inside face mounted with guides at jambs set back a sufficient distance to provide a clear opening when door is in open position.

B. Not used.

C. All motor operators shall have manual emergency mechanical operators.

D. Fire rated doors shall conform to the requirements specified herein and to NFPA 80 for the class indicated. Doors shall bear Underwriters Laboratories, Inc. label indicating the applicable fire rating.

2.3 FABRICATION

A. Curtains:

1. Form of interlocking slats of stainless shapes standard with the manufacturer.
2. Thickness of slats shall be as required to resist loads specified except not less than the following:
   a. For doors less than 4500 mm (15 feet) wide: 0.75 mm (0.0299 inch).

C. Not used.

D. Bottom Bar:

1. Bottom bar designed to receive safety device, and be securely fastened to bottom of door.
2. Integral smoke/fire seal.

E. Barrel and Spring Counterbalance:

1. Curtain shall coil on a barrel supported at end of opening on brackets and be balanced by helical springs.
2. Barrel fabricated of steel pipe or commercial welded steel tubing of proper diameter and thickness for the size of curtain, to limit deflection with curtain rolled up, not to exceed 1 in 400 (0.03 inch per foot) of span.
3. Close ends of barrel with cast iron plugs, machined to fit the opening.
4. Within the barrel, install an oil-tempered, helical, counter balancing steel spring, capable of producing sufficient torque to assure easy operation of the door curtain from any position.

5. At least 80 percent of the door weight shall be counter balanced at any position.
6. Spring-tension shall be adjustable from outside of bracket without removing the hood.

F. Brackets:

1. Steel plate designed to form end closure and support for hood and the end of the barrel assembly.
2. End of barrel or shaft shall screw into bracket hubs fabricated of cast iron or steel.
3. Equip bracket hubs or barrel plugs with prelubricated ball bearings, shielded or sealed.

G. Hoods:

1. Steel, 0.6 mm (0.0239 inch) thick, above ceiling.
2. Form hood to fit contour of end brackets.
3. Reinforce at top and bottom edges with rolled beads, rods or angles.
4. Fasten to brackets with screws or bolts and provide for attachment to wall with bolts.

H. Guides:

1. Manufacturer's standard formed sections or angles of stainless steel.
   a. Stainless steel sections not less than 5 mm (3/16 inch) thick.
2. Form a channel pocket of sufficient depth to retain the curtain in place under the horizontal pressure specified, and prevent ends of curtain from slipping out of guide slots.
3. Top sections flared for smooth entry of curtain to vertical sections that will facilitate entry of curtain.
4. Provide stops to limit curtain travel above top of guides.
5. Provide guide of aluminum with replaceable wear strips to prevent metal to metal contact.
6. Mounting brackets shall provide closure between guides and jambs.
7. Provide integral smoke seals.
8. Guides shall be recessed in wall as indicated on drawings.

I. Not used.

J. Locking:

1. Cylinder locks shall receive standard screw in cylinders furnished under Section, 08 71 00 DOOR HARDWARE.

2.4 ELECTRIC MOTOR OPERATORS

A. Provide operators complete with electric motor, machine cut reduction gears, steel chain and sprockets, magnetic brake, overload protection, brackets, push button controls, limit switches, magnetic reversing contactor, and other accessories necessary for proper operation including emergency manual operator.

B. Design:

1. Design the operator so that the motor may be removed without disturbing the limit-switch timing and without affecting the emergency manual operators.
2. Provide emergency manual operation of door.
3. Arrange the emergency manual operating mechanism so that it may be immediately put into and out of operation from the floor with an electrical or mechanical device, which will disconnect the motor from the operating mechanism when the emergency manual operating mechanism is engaged, and its use shall not affect the timing of the limit switches, in case of electrical failure.
4. Provide interlock with motor to prevent motor from operating when manual locks are activated.

C. Motors:

1. Motors shall conform to NEMA MG1, suitable for operation on current of the characteristics indicated, and shall operate at not more than 3600 rpm. Single-phase motors shall not have commutation or more than one starting contact. Motor enclosures shall be the drip proof type of NEMA TENV type.
2. Motors shall be high starting torque, reversible type, of sufficient horsepower and torque output to move the door in either direction from any position, and produce a door travel speed of not less than 0.66 foot or more than one foot per second, without exceeding the rated capacity.

D. Controls:

1. The control equipment shall conform to NEMA ICS 1 and 2.
2. Control enclosures shall be NEMA ICS 6, Type 12 or Type 4, except that contractor enclosures may be Type 1.
3. Not used.
4. Each door motor shall have an enclosed, across-the-line type, magnetic reversing contactor, thermal overload protection, solenoid

operated brake, limit switches, and remote control switches at locations shown.

5. Not used.
6. Use three-button type, push button switch on interior, unless noted to be key activated, with the buttons marked, OPEN, CLOSE, and STOP.
   a. The OPEN and STOP buttons shall be of the type requiring only momentary pressure to operate. The CLOSE button shall be of the type requiring constant pressure to maintain the closing motion of the door. When the door is in motion, and the STOP button is pressed, the door shall stop instantly and remain in the stop position; from the stop position, the door may then be operated in either direction by the OPEN or Close buttons.
   b. Push buttons shall be full-guarded to prevent accidental operation.
   c. Flush Mounted, verify switch location with Project Manager.
7. Provide limit switches to automatically stop the doors at their fully open and closed positions. Positions of the limit switches shall be readily adjustable.
8. Safety device:
   a. The bottom bar of power-operated doors shall have a fail safe safety device that will immediately stop and reverse the door in its closing travel upon contact with an obstruction in the door opening, or upon failure of the device, or any component of the device, or any component of the control system, and cause the door to return to its full open position. The door closing circuit shall be electrically locked out, and the door shall be operable manually until the failure or damage has been corrected.
   b. Safety device shall not be used as a limit switch.
   c. Safety device connecting cable to motor shall be flexible "Type SO" cable and spring loaded automatic take up reel or equivalent device, as required for proper operation of the doors.
9. Transformer:
   a. Provide a control transformer in power circuits as necessary to reduce the voltage on the control circuits to 120 volts or less.
   b. The transformer shall conform to NEMA ST20.
10. Electrical components shall conform to NFPA 70.

2.5 NOT USED

2.6 FIRE DOORS

A. Ninety (90) minute fire doors shall be complete with hardware, accessories, and automatic closing device as required by NFPA 80.

B. Equip fire doors with an automatic closing mechanism actuated by fire alarm system, smoke detectors and power loss.

C. Doors shall be forced into a closed position by an auxiliary spring in the barrel which is inoperative during normal operation and when activated will not affect the adjustment of the counterbalance spring. The auxiliary spring shall exert pressure on the curtain until the release device is reset. Door shall come to rest on the floor without impact.

D. Control descent of curtain by an oscillating governor.

E. Provide handles for push up operation.

F. Provide UL label for "Leakage Rated Assembly" or "S" Smoke label.

1. Comply with NFPA 105 air leakage requirements.
2. Pass UL test procedure 1784.

2.7 FINISHES

A. Stainless Steel:

1. Mill finish on concealed surfaces,

2. No. 4 finish on all exposed surfaces.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install door in accordance with approved shop drawings and manufacturer's instructions.

B. Locate anchors and inserts for guides, brackets, hardware, and other accessories accurately.

C. Securely attach guides to adjoining construction as required by manufacturers instructions.

D. Locate control switches as directed by Project Manager.

E. Install all electric devices and wiring as specified in DIVISION 26 ELECTRICAL.

3.2 REPAIR

A. Coiling Doors shall be lubricated, properly adjusted, and demonstrated to operate freely.

3.3 PROTECTION

A. Isolate aluminum in contact with or fastened to dissimilar metals other than stainless steel, white bronze or other metals not compatible with aluminum by one of the following:

1. Paint the dissimilar metal with a prime coat of zinc-Molybdate or other suitable primer, followed by two coats of aluminum paint.
2. Place an approved caulking compound, or a non-absorptive tape, or gasket between the aluminum and the dissimilar metal.

3.4 INSPECTION

Upon completion, door shall be free from warp, twist, or distortion.

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